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# Proceedings of the Regional Peer Review of the Assessment of Gulf of St. Lawrence (4RST) Atlantic Halibut

**February 21, 2017**
**Mont-Joli, Qc**

**Chairperson : Bernard Sainte-Marie**
**Rapporteur : Sonia Dubé**

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Canada

**Foreword**

The purpose of these Proceedings is to document the activities and key discussions of the meeting. The Proceedings may include research recommendations, uncertainties, and the rationale for decisions made during the meeting. Proceedings may also document when data, analyses or interpretations were reviewed and rejected on scientific grounds, including the reason(s) for rejection. As such, interpretations and opinions presented in this report individually may be factually incorrect or misleading, but are included to record as faithfully as possible what was considered at the meeting. No statements are to be taken as reflecting the conclusions of the meeting unless they are clearly identified as such. Moreover, further review may result in a change of conclusions where additional information was identified as relevant to the topics being considered, but not available in the timeframe of the meeting. In the rare case when there are formal dissenting views, these are also archived as Annexes to the Proceedings.

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## SUMMARY

This document contains the proceeding from the meeting held within the regional Assessment of Atlantic Halibut of the Gulf of St. Lawrence (4RST). This review process was held on February 21, 2017 at the Maurice Lamontagne Institute in Mont-Joli. This meeting gathered about fifty participants from sciences, management and industry. This proceeding contains the essential parts of the presentations and discussions held and relates the recommendations and conclusions that were presented during the review.

## SOMMAIRE

Ce document renferme le compte rendu de l'examen régional par des pairs portant sur l'évaluation du stock de flétan atlantique du golfe du Saint-Laurent (4RST). Cette revue, qui s'est déroulée le 21 février 2017 à l'Institut Maurice-Lamontagne à Mont-Joli, a réuni près d'une cinquantaine de participants des sciences, de la gestion et de l'industrie. Ce compte rendu contient l'essentiel des présentations et des discussions qui ont eu lieu pendant la réunion et fait état des recommandations et conclusions émises au moment de la revue.

## INTRODUCTION

The Quebec Region of Fisheries and Oceans Canada (DFO) is responsible for assessing several stocks of fish and invertebrate species harvested in the Estuary and Gulf of St. Lawrence. Most of these stocks are periodically assessed as part of a regional advisory process conducted at the Maurice Lamontagne Institute in Mont-Joli. This document consists of the proceedings of the assessment meeting held on February 21, 2017, on the assessment of the Gulf of St. Lawrence Atlantic Halibut stock (4RST).

The objective of the review was to determine whether there were any changes in the resource's status and whether adjustments were required to the management plans based on the chosen conservation approach, the ultimate goal being to provide scientific advice on managing the Gulf of St. Lawrence Atlantic Halibut stock (4RST) for the 2017 and 2018 fishing seasons.

These proceedings report on the main points discussed in the presentations and deliberations stemming from the activities of the stock assessment regional committee. The regional review is a process open to all participants who are able to provide a critical outlook on the status of the assessed resources. Accordingly, participants from outside DFO are invited to take part in the committee's activities within the defined terms of reference for this review (Appendices 1 and 2). The proceedings also list the recommendations made by meeting participants.

## CONTEXT

Meeting chairperson Bernard Sainte-Marie welcomes the participants. He goes over the objectives of the peer review and how it will proceed and presents the terms of reference and agenda for the meeting. After the participants have introduced themselves, Arnaud LeBris provides a brief overview of a satellite tagging study conducted in 4RST (2013-2016). The purpose of this study was to examine the seasonal migration and stock structure of Atlantic halibut, and then to identify behaviours and spawning areas. Among other things, the study identified a potential winter breeding area at depths greater than 350 m at the junction of the Esquiman and Laurentian channels near Cabot Strait.

- Participants question the need for co-management of the 4RST stock, since northern and southern Gulf spawning halibut seem to be exhibiting some homing behaviour, which suggests the existence of two stocks.
- However, it is believed that the spawning areas of both stocks may overlap.
- The participants hope that this study will be extended to the other regions of the Gulf to provide a better understanding of Atlantic halibut migration.

Assessment biologist Mathieu Desgagnés gives an overview of halibut biology and fishery management. Data from fishery-independent surveys (DFO survey: northern and southern Gulf; mobile gear sentinel survey: northern and southern gulf) and commercial fishery data (quota reports, logbooks, catch sampling and at-sea sampling) were used for the assessment.

- Purchase prices vary by size. This appears to provide an incentive to target certain sizes, and therefore certain fishing grounds.
- A participant mentions that the current 85-cm minimum size applies to all areas.
- Halibut appear to be avoiding the cold intermediate layer (CIL).

## RESOURCE ASSESSMENT

### LANDINGS

Atlantic halibut landings have been increasing since the early 2000s and have reached the highest values since 1952. For management years 2015-2016 and 2016-2017, preliminary landings were respectively 1024 t and 950 t for a TAC of 1037 t. There is no reason to believe that the 2016-2017 TAC will not be caught.

- Despite the increase in landings, they remain well below historical levels. There is no reason to doubt these high historical levels. A participant says that the U.S. fleet was very active in the 1930s-1940s.
- Management is asked to update the 2015-2016 and 2016-2017 values.

### RESEARCH SURVEYS

Pre-recruit abundance indicators from fishery-independent survey data reached among the highest levels in the historical series, and recent trends are stable or rising. Also, the size frequency distributions suggest good recruitment to the fishery in the coming years.

The participants have no comments following the presentation on the research surveys.

### COMMERCIAL FISHERY

Catches per unit effort for the directed Atlantic halibut longline fishery are at their highest historical levels and have been stable since 2013. Over the past 10 years, the proportion of Atlantic halibut under 85 cm has decreased in catches at sea and was about 40% in the last two years. However, the proportion of halibut over 130 cm (i.e. size at 50% maturity for females) increased from under 5% to about 20% over the past 10 years.

- Participants note that the Newfoundland region is under-represented in landings, as some vessels do not keep a logbook.
- Fewer halibut seem to be caught in the directed turbot fishery.

### OTHER RESEARCH PROJECTS

A short presentation is given on a satellite tagging project in the southern Gulf (2013-2014) and on pilot projects carried out in preparation for a longline survey and a tagging project in 4R and 4S (2014-2016).

- Participants hope that these pilot projects, which pertain specifically to Atlantic halibut, will become regular surveys.

### WEIGHT–LENGTH RATIO

Work has been done in the past decade to develop a representative weight-length ratio for 4RST halibut.

- Participants note that there could be a difference between the northern and southern Gulf.
- For now, the results have been used to produce a (weight-length) conversion table, which will be integrated into the research document.

## CONVERSION FACTOR

A conversion factor was calculated to convert gutted weight to round weight, and the resulting values were below those currently used (1.14 and 1.15, depending on the region).

- According to participants, a factor of 1.10 would be closer to reality.
- Some participants believe that sampling was insufficient. Care should be exercised in interpreting the results. Could Teleost data be used to increase the number of samples?
- Participants also note that the month, area and sex have an effect. Sampling should be more representative of the seasons and the different areas.

# CONCLUSION

## INTERIM YEAR

The participants agree to provide advice for two years (scientific advice for the 2017 and 2018 fishing seasons). No indices will be reviewed for the interim year. There is little likelihood of seeing any major change soon. However, it may be appropriate to identify a representative index to be followed for the interim year, as well as an index that will trigger a full assessment.

## OCEANOGRAPHIC CONDITIONS

The thickness of the cold intermediate layer (CIL), which halibut seem to avoid, is decreasing, which could have an impact on the area occupied by halibut. It is also difficult to anticipate how the warming of deep channel waters will affect the 4RST halibut stock.

## RESEARCH

The purpose of the work deemed a priority by the meeting is to:

- Implement a longline survey;
- Identify and assess the stock in 3Pn;
- Examine the genetic differences between the two management units (4RST and 3NOPs4VWX5Zc);
- Review the round weight – gutted weight conversion factor;
- Assess the impact of a change in hook size on Atlantic halibut catches;
- Examine the exchange of fish between the two management units (4RST and 3NOPs4VWX5Zc);
- Work on the development of reference points;
- Think about a representative index for the interim year and a trigger for full assessment.

## HIGHLIGHTS AND ADVICE

The highlights are presented and the participants comment on them. Some facts are withdrawn; others are reworded. Comments having to do with stylistic rewording are not reported.

- It should be mentioned that there is no reason to believe that the 2016-2017 TAC will not be caught.
- Catches per unit effort are at their highest historical levels and have been stable since 2013.

- It is suggested that a highlight be added regarding the satellite tagging work, specifically that a winter breeding area was identified at the junction of the Esquiman and Laurentian channels near Cabot Strait.
- Participants estimate that the fished component of the stock has been stable for the last four years, at its highest historical level, and that recruitment to the fishery is expected to increase in the coming years.
- However, industry representatives find there has been an increase (rather than stability) and would like this view to be mentioned in the advisory report.

Finally, some **conclusions** are made:

There is no reliable indicator to measure spawning biomass for this stock. Current approaches do not provide quantitative data on spawning biomass levels or trends.

The fished component of the stock has been stable for the last four years, at its highest historical level, and recruitment to the fishery is expected to increase in the coming years. However, harvest levels for the fished component are unknown.

## APPENDIX 1 – LIST OF PARTICIPANTS

| Name | Affiliation |
|---|---|
| Beauchamp, Jocelin | Industry |
| Bernier, Denis | DFO Science |
| Boucher, André | RPPNG |
| Boucher Jean-René | RPPNG |
| Bourdages, Hugo | DFO Science |
| Brassard, Claude | DFO Science |
| Brulotte, Sylvie | DFO Science |
| Carruthers, Erin | FFAW |
| Castonguay, Martin | DFO Science |
| Coffin, David | DFO Fisheries Management, Newfoundland and Labrador Regions |
| Comeau, Réginald | Industry |
| Cotton, Allen | ACPG |
| Courtney, Robert | North of Smokey Fishermen's Association |
| Chabot, Denis | DFO Science |
| Cyr, Charley | DFO Science |
| Denis, Marcel | ACPG |
| Desgagnés, Mathieu | DFO Science |
| Doucet, Marc | Industry |
| Doucet, Richard | Industry |
| Dubé, Frank | Industry |
| Dubé, Sonia | DFO Science |
| Dufresne, Yvon | DFO Science |
| Duguay, Gilles | Industry |
| Dwyer, Shelley | Province of Newfoundland and Labrador |
| Ferguson, Louis (tel) | Province of New Brunswick |
| Gauthier, Johanne | DFO Science |
| Giffin, Melanie | Industry |
| Gilbert, Michel | DFO Science |
| Gosselin, Claude | Industry |
| Hurtubise, Sylvain | DFO Science |
| LaCosta, Roger | Industry |
| Lambert, Yvan | DFO Science |
| Langelier, Serge (tel) | AMIK |
| Lavoie, Céline | DFO Fisheries Management, Gulf Region |
| LeBris, Arnaud | Université Memorial, Newfoundland and Labrador |
| Lussier, Jean-François | DFO Science |
| MacDonald, Michael | Industry |
| Morneau, Renée | DFO Science |
| Murphy, Willie | Industry |
| Nadeau, Paul | RAPBCN |
| Nozères, Claude | DFO Science |
| Ouellette-Plante, Jordan | DFO Science |
| Ramsay, Laura | PEIFA |
| Sainte-Marie, Bernard | DFO Science |
| Sandt-Duguay, Emmanuel | AGHAMM |
| Spingle, Jason | FFAW |
| St-Pierre, Sylvie | DFO Science |

| Name | Affiliation |
| --- | --- |
| Travis, James | Prince Edward Island University |
| Trottier, Steve | DFO Fisheries Management, Québec Region |

## APPENDIX 2 – TERMS OF REFERENCE

### Assessment of the Gulf of St. Lawrence (4RST) Atlantic halibut

**Regional Peer Review - Quebec Region**

**February 21, 2017**
**Mont-Joli, QC**

Chairperson: Bernard Sainte-Marie

### Context

The directed Atlantic halibut fishery is mainly carried out by longliners. To protect the population's reproductive potential, this fishery is subject to several management measures including the control of catches by a total allowable catches (TAC). Atlantic halibut represent a by-catch for other fleets, in particular the gillnet Greenland halibut fleet.

At the request of the fisheries management Branch, resource assessment is done every two years. The purpose of the review is to determine whether changes have occurred in the status of the resource that would justify adjustments to the management plan based on the retained conservation approach.

### Objectives

Provide scientific advice on Atlantic halibut stock status in NAFO Divisions 4RST. This advice shall include:

- Description of the biology of Atlantic halibut and its distribution;
- A summary of oceanographic conditions in the Gulf;
- Analysis of the commercial fishing data including landings, fishing effort, catch per unit effort, biological data;
- Analysis of data from the DFO annual research trawl survey in August and sentinel fisheries;
- The determination of the process to provide advice during the interim years, including a description of conditions that may warrant a full stock assessment earlier than originally planned;
- Perspectives for 2017 and 2018 based on available indicators;
- Based on the assessment needs, setting research priorities for the next 5 to 10 years.

### Expected Publications

- Science Advisory Report on the Atlantic halibut in the Gulf of St. Lawrence (4RST)
- Proceedings
- Research Document

### Participation

- Fisheries and Oceans Canada (DFO) (Science and Fisheries Management sectors)
- Fishing industry
- Provincial representatives
- Aboriginal communities/organizations
- External experts